

## **REMARKS/ARGUMENTS**

At the time of the Final Office Action of August 4, 2006, claims 1-25 were pending in the present patent application. Claims 1-25 have been rejected on various grounds discussed below. Reconsideration is requested in view of the following remarks.

### **Claim Rejections – 35 USC § 102**

Claims 1-25 were rejected as being anticipated by US Patent 4,078,606. The Applicants respectfully traverse these rejections.

The '606 reference does not teach a packer having both a double acting slip and a single acting slip. It teaches only a double acting slip for anchoring a packer to a casing. The '606 reference does not teach a packer capable of dividing forces on the packer between two different slips and transferring those forces through the two different slips to the casing at spaced apart locations.

The '606 reference does not teach one mandrel on which is carried two slips and a seal element. The '606 teaches a first mandrel, the actual packer mandrel, on which is carried one double acting slip and a seal element. The '606 reference also teaches a second mandrel, actually a work or production tubing passing through the packer, on which is carried a single acting slip. The single acting slip engages the inner surface of the packer mandrel to hold the work string in position inside the packer. The single acting slip does not resist forces applied to the packer, i.e. prevent the packer from moving relative to the well, but in fact applies forces to the packer which must be resisted by the double acting slip of the actual packer.

The actual packer assembly of the '606 reference is described at col. 5, lines 23-59. Slip 96 is not mentioned in this description, because it is not part of the packer.

**Claim 1:**

The Examiner asserts that the US '606 reference discloses an apparatus that includes an apparatus operatively positionable within a subterranean well comprising: a mandrel 20; a double acting slip 38 and a single acting slip 96 disposed relative to the mandrel, the double acting slip being axially spaced apart from the single acting slip; and a seal element 36 carried on the mandrel. The Applicants disagree with this reading of US '606.

US '606 does disclose a double acting slip 38. However, it is not disposed on the mandrel 20. It is disposed on the packer body 14, which is in fact the packer mandrel. Likewise, the seals 36a, 36b, and 36c are disposed on the seal mount 42, which is part of packer body 14, not on the mandrel 20. See Figs. 1A and 1B, and col. 5, lines 23-29.

The mandrel 20 is not part of the packer 14. Instead it is part of a separate apparatus called a mandrel assembly 12 attached to a work string that is used to run the packer 14 into a well and to set and unset the packer 14 and may form the production tubing. The mandrel 20 extends through the packer 14, is axially movable relative to the packer 14, and is connected to the packer 14 by a J-slot section 22. See col. 4, line 54 to col. 5, line 4.

The mandrel assembly 12 is vertically movable within the packer 14 after the packer 14 is set in the well. The vertical movement allows a bypass flow passage 74 to be opened or closed. See Col. 8, lines 3-12. However, pressure below the packer 14 tends to lift the assembly 12 and open the passage 74 when it is desired to close the passage 74. See col. 8, lines 49-61.

US '606 provides a pressure compensation system to resist movement of the mandrel assembly 12 relative to the set packer 14. See col. 8, lines 62-67. The element 96 is part of the pressure compensation system and is referred to as a split ring slip 96 at col. 9, lines 4-5. However,

element 96 is not part of the packer 14 itself. It is part of the work string that includes the mandrel 20 and mandrel assembly 12 that is used to set the packer 14 and to open and close the bypass passage 74.

Note that the pressure compensation system is used after the packer is set. When a packer is set, its slips and its seal engage a well casing. In US '606, it is not necessary for the element 96 to engage any other element for the packer to be set.

The element 96 does not engage the well casing. Instead it engages an inner surface of the upper seal retainer 40, part of the packer 14. Any forces resisted by the element 96 are transferred to the packer 14 and through its slip 38 to the well casing. See col. 10, lines 20-37.

Therefore, even if element 96 is considered to be a single acting slip, it is not carried on the same mandrel as the double acting slip 38 and it does not and cannot perform the functions of a packer slip, i.e. it cannot resist movement of the packer 14 relative to the casing C, since it cannot and does not contact the casing C.

**Claim 13:**

With reference the claim 13, the Examiner asserts that US '606 discloses a packer settable within a tubular structure, the packer comprising: a mandrel 20; first and second axially spaced apart slips 38, 96 disposed relative to the mandrel, the first and second slips being radially outwardly extendable into gripping engagement with the tubular structure when the packer is set therein, the first slip resisting a load applied to the mandrel in a first axial direction and the second slip resisting another load applied to the mandrel in a second direction, opposite the first direction; a seal element carried about the mandrel, the seal element being radially outwardly extendable into

sealing engagement with the tubular structure when the packer is set therein a pressure differential in the first axial direction applied to the seal element being resisted by the second slip.

The elements 38 and 96 are not carried on the same mandrel. Element 96 is carried on the mandrel assembly 12 that includes a mandrel 20. The double acting slip 38 is carried on the seal mount 42, which is part of packer body 14, and is a separate mandrel. Mandrel 20 is part of the work string used to run the packer 14 into a well and to set and unset the packer 14. Mandrel assembly 12 is also used to open and close bypass passage 74 by lifting and lowering the mandrel assembly 12 relative to the packer 14 after it has been set in the well.

The element 96 is not radially outwardly extendable into gripping engagement with the tubular structure when the packer is set therein. Instead element 96 is radially outwardly extendable into gripping engagement with an inner surface of the packer body 14.

Since element 96 may be engaged with the inner surface of the packer body 14 when the bypass passage 74 is closed, any forces applied to the mandrel assembly 12 and resisted by the element 96 are transferred through packer body 14 to the slip 38. Thus any forces on mandrel assembly 12 are added to the forces on packer 14 itself and the sum of the forces are resisted by the slip 38. There is no second slip resisting forces in a second direction opposite a first direction as required by claim 13. This is the contrary to the present invention which teaches apparatus and methods for dividing various forces and distributing those forces to two separate slips, thereby reducing the total forces applied to any one location of the well casing.

The seal element 36 is not carried on the mandrel 20, but instead is carried on the packer body 14, which is actually a separate mandrel. US '606 does not teach how a pressure differential on the seal element is resisted. Since there is only one slip 38 that resists movement of the packer body 14 relative to the casing C, it must be slip 38 that resists the pressure differential. It is clear

that the pressure differential on the seal 36 is not resisted by the element 96. It is equally clear that the forces on the mandrel assembly 12 that are resisted by the element 96 are transferred to the slip 38, not to another slip of the packer 14. It is clear that there is no distribution of forces applied to the casing.

**Claim 18:**

With particular reference to claim 18, the Examiner asserts that US '606 discloses a method of securing an apparatus within a tubular structure disposed in a subterranean well, the method comprising the steps of: disposing a double acting slip and a single acting slip axially spaced apart on the apparatus; positioning the apparatus within the tubular structure; radially outwardly extending the double acting slip and the single acting slip, each of the double acting slip and the single acting slip grippingly engaging the tubular structure; and radially outwardly extending a circumferential seal element into sealing engagement with the tubular structure.

In US '606, the packer 14 itself has only one slip 38. The element 96 is part of another apparatus, the mandrel assembly 12, that is used for various running, setting, unsetting and flow control purposes discussed above. US '606 does not teach two slips on one apparatus.

The element 96 is not radially outwardly extendable to grippingly engage the tubular structure. The slip 38 may be extended outwardly from the packer body 14 to engage the tubular structure. But, the element 96 is extended outwardly to engage the inner surface of the packer body 14.

The seal 36 of US '606 is radially outwardly extendable into contact with the same tubular structure as the slip 38. However, it does not extend outward to engage the same body as the

element 96 which extends outwardly to engage the inner surface of the packer body 14. The seal 36 is carried on the outer surface of the packer body 14.

In view of these substantial differences between the cited references and the independent claims 1, 13 and 18, the Applicants submit that the independent claims are clearly patentable over the cited references. Since the remaining claims all depend from claims 1, 13 or 18, the Applicants submit that the dependent claims are also patentable over the cited references.

**Examiner's response to arguments:**

The Examiner disagreed with Applicants' position that the double acting slip of the '606 reference was not on the mandrel 20. As amended, the claims require the slips to be carried on the mandrel. One skilled in the art clearly understands that a slip carried on a mandrel in a well operates when deployed by forming a mechanical connection between the mandrel and the well wall, usually a casing. One skilled in the art would understand that when two slips are carried on one mandrel, they will both provide such mechanical connections. One skilled in the art would see a clear distinction between the '606 reference slip 96 locking a work string inside a packer, and a second slip mechanically connecting the packer to the well.

The Examiner argues that the slip 96 engages the same tubular structure as the slip 38 because it engages the inside surface of the packer body 40, which in turn is connected to the tubular structure by the slip 38. The claims require that the two slips be radially extendable for grippingly engaging the same tubular body. The '606 reference clearly does not teach or suggest

such a structure. The '606 reference structure cannot and does not provide load distribution which is one of the advantages of the presently claimed embodiments.

The Examiner disagrees with the Applicants' argument that the '606 reference does not teach the seal on the same mandrel as the two slips. As amended, the claims clearly state that the seal is carried on the same mandrel. When a seal is carried on a mandrel, it provides the function of sealing between that mandrel and the well casing. The seal of the '606 reference provides that function between the seal mount 42, part of the packer body with slip 38, and the well. The seal does not provide a seal between the mandrel 20 and the well.

### CONCLUSION


Consideration of the foregoing remarks, reconsideration of the application, and withdrawal of the rejections is respectfully requested by Applicants. It is believed that each ground of rejection raised in the Final Office Action dated August 4, 2006 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,  
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